MDOT
Michigan Department of Transportation

WEST MICHIGAN
TRANSPORTATION
OPERATIONS CENTER

www.Michigan.gov/WMTOC

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Monthly Performance Measures

August 2018

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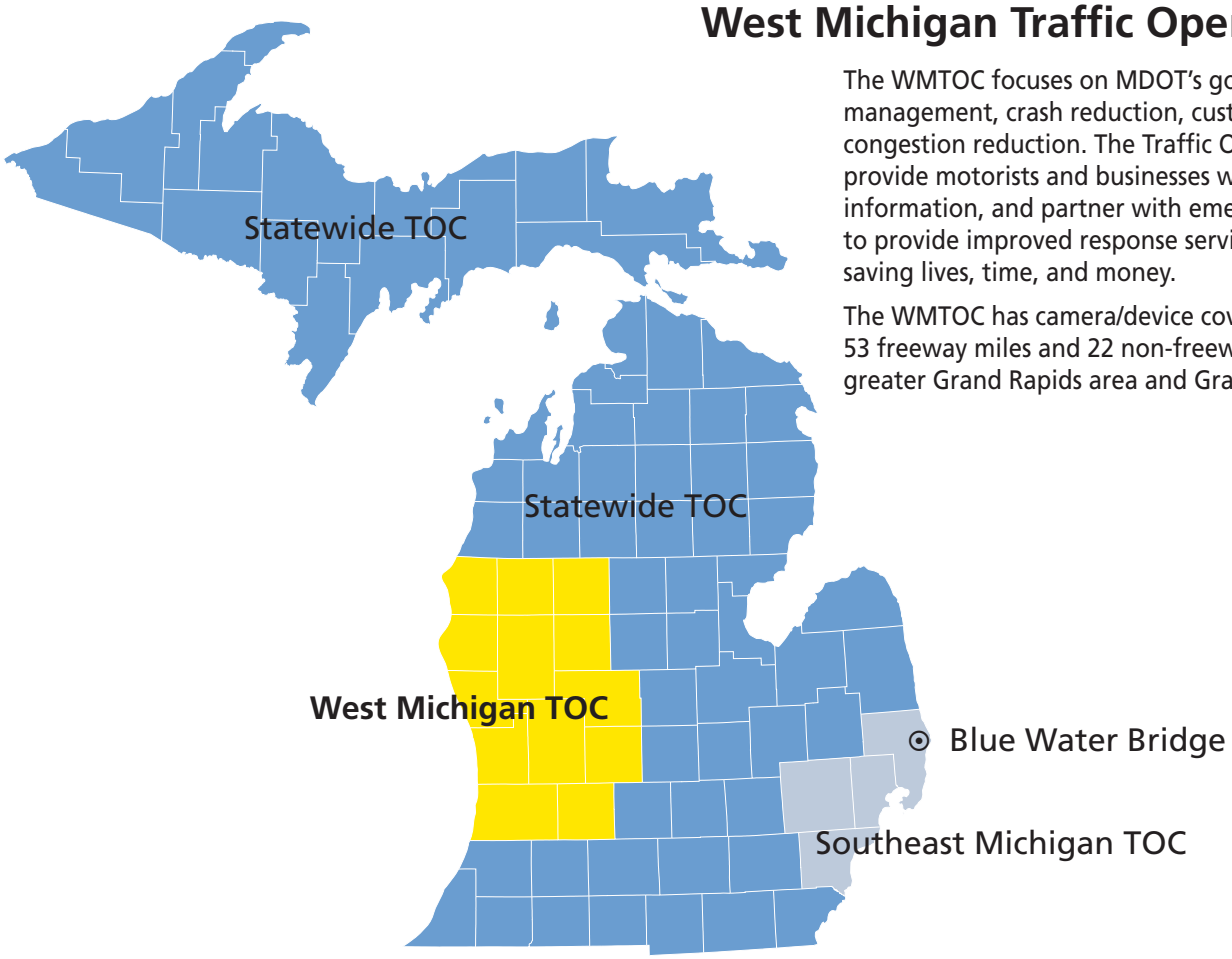
MDOT'S MISSION

Providing the highest quality integrated transportation services for economic benefit and improved quality of life.

West Michigan Traffic Operations Center



The WMTOC focuses on MDOT's goals of incident management, crash reduction, customer information, and congestion reduction. The Traffic Operations Centers (TOC) provide motorists and businesses with real-time traffic information, and partner with emergency response agencies to provide improved response services to traffic crashes – saving lives, time, and money.

The WMTOC has camera/device coverage on approximately 53 freeway miles and 22 non-freeway trunkline miles in the greater Grand Rapids area and Grand Haven.

Spotlight Events

The West Michigan Transportation Operations Center (WMTOC) continued working through July and August to reach out to the remaining dispatch centers in our 13-county region. So far, WMTOC staff, along with Michigan Department of Transportation (MDOT) maintenance first responders, met with or had visits from Allegan, Barry, Ionia, Kent, Lake, Mecosta, Osceola, Montcalm, Muskegon, Newaygo, and Ottawa counties. During the meetings, we were able to learn more about how each center operates, convey the importance of timely incident communication, and raise awareness of the services the WMTOC can provide to support their operations.

All the centers were offered the opportunity for training in Mi-TIME traffic incident management for dispatch, police, fire and road commission personnel that respond to crashes and other roadway incidents. While some have had training in the past, there was interest in getting a refresher class to increase their awareness of best practices in incident management.

WMTOC staff took the opportunity to explore the possibility of having dispatch centers provide data directly to MDOT through an automated computer-aided dispatch feed. All were willing to provide crash data to improve tracking of incidents within their jurisdictions. A pilot with the Kent County 911 Dispatch Center to create the process that can be shared with other centers around the state is ongoing.

The visits were very beneficial in establishing and maintaining lines of communication with our local partners. We will be in contact on a regular basis to ensure that we are providing the necessary support from MDOT. We look forward to continuing relationships with all the first responders in the Grand Region.

Following the outreach efforts, the WMTOC received a positive increase in communications from the dispatch centers. An example of this improved communication occurred during a crash on Aug. 27 on US-31 at M-104 in Ottawa County. The crash involved several vehicles and blocked two of the three travel lanes for more than 90 minutes. Ottawa County was instrumental in keeping us updated during this incident and advising the WMTOC of the progress on scene. The communications allowed the WMTOC the opportunity to assist them with camera coverage and to send public notifications during the incident. These communications will allow the WMTOC to provide more assistance to improve the safety of responders and the traveling public.

Events by Type

Figure 1 shows events by type.

Event: An occurrence within the transportation operations center (TOC) coverage area that results in TOC involvement or tracking. Several different types of events occur, including: Crash, Disabled Vehicle, Abandoned Vehicle, Debris, Congestion, Construction, Maintenance, AMBER Alert, Weather, and Special Event types. Any other occurrence that has TOC involvement is classified as "Other."

Incident: An unplanned event that directly affects a state trunkline. These are primarily abandoned vehicles, crashes, disabled vehicles, and debris in the roadway, but occasionally include police situations and fires.

Of the **199** total **Events** this month, **66 percent**, or **131**, were classified as **Incidents**.

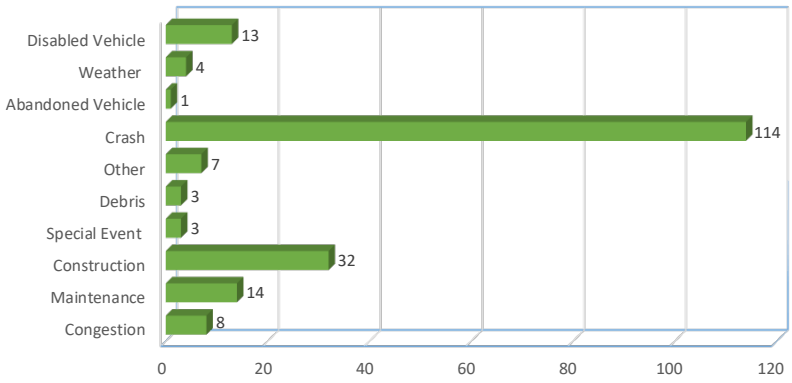


Figure 1

Incidents by Detection Source

Figure 2 provides information on how incidents were detected.

Control room operators (CRO) rely on various sources to detect **Incidents** that occur along the freeways. Noting the source not only ensures that the **Incident** was detected by a reliable source, but also provides insight as to which sources are utilized most frequently. "Other" includes any source that is infrequent, such as responders on scene or third-party notifications.

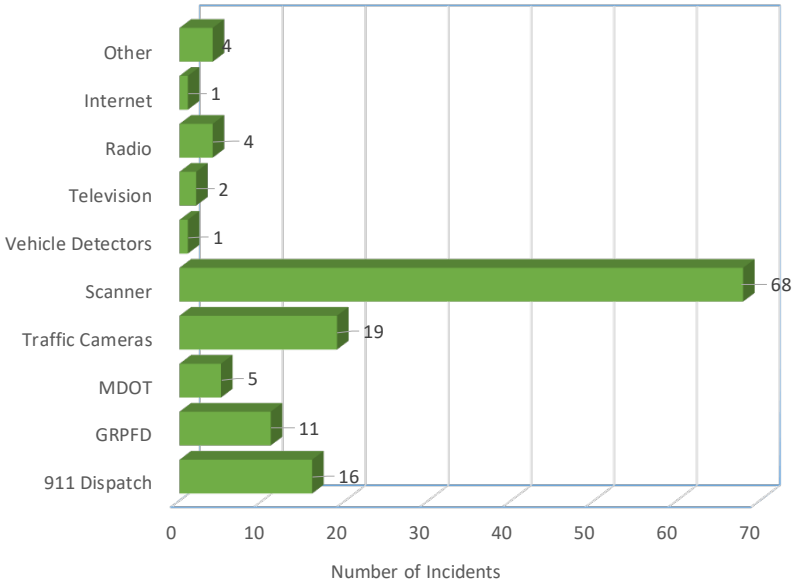


Figure 2

Communication

Figure 3 shows the number of communications managed by CROs.

WMTOC tracks all outgoing and incoming communications to the control room. This includes phone calls, e-mails, and notifications.

CROs managed **1,591 Communications** this month. This included **509 (32 percent)** Phone Calls and **1,082 (68 percent)** E-mails. The highest source of **Communication**, **22 percent**, was between the control room and **Incident Notification E-mails**. "Other" includes Contractors, Nixle, and Service Providers.

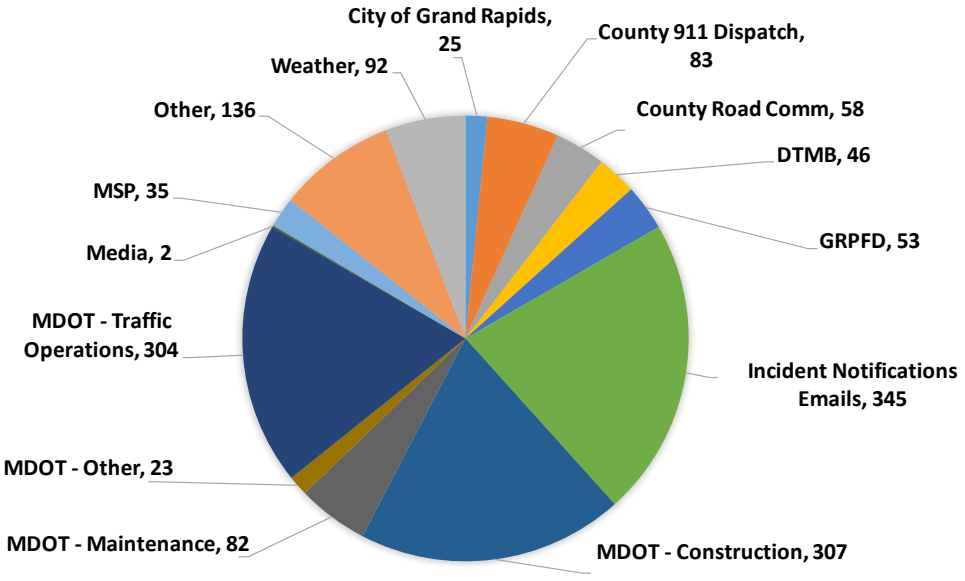
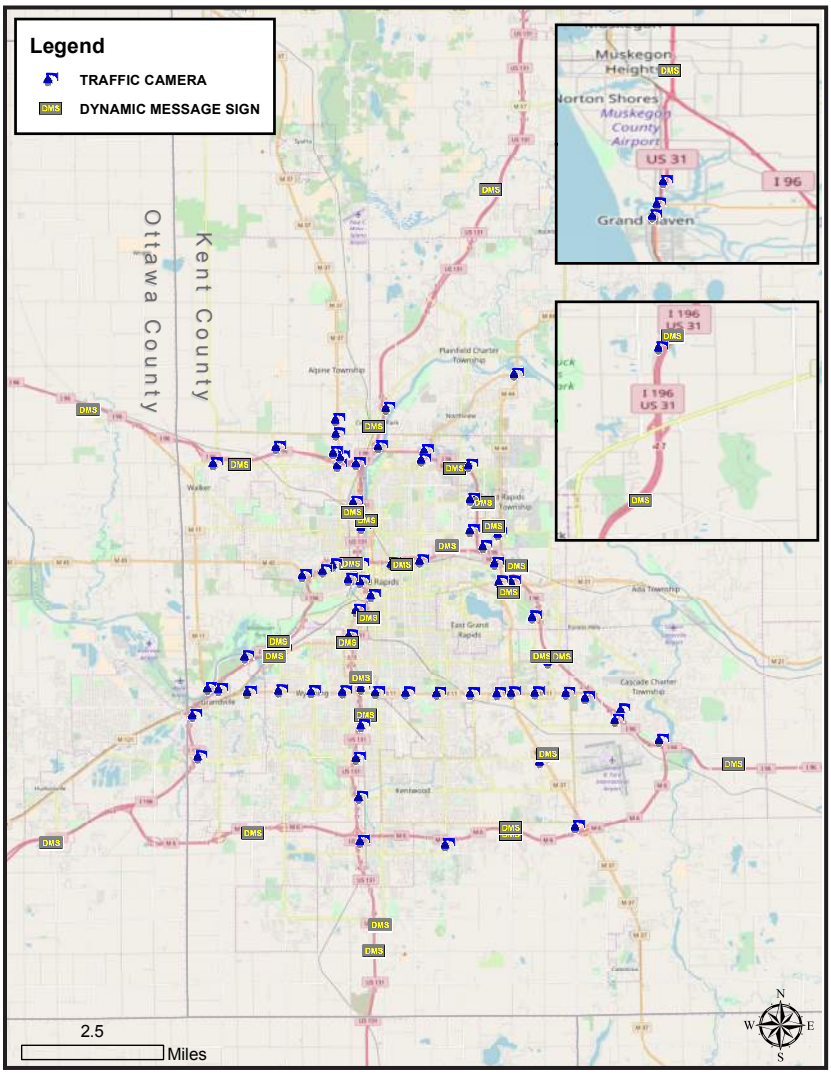


Figure 3

Device Locations



DMS Messages by Type

There were **450** "unique messages" displayed throughout the intelligent transportation systems network this month on dynamic message signs (DMS), as shown in **Figure 4**.

A "unique message" may be an Incident, Special Event, Safety Message, Congestion, Weather, Construction, AMBER Alert, or other unique message.

Travel time messages are routinely displayed when unique messages are not active. Travel times are updated every three minutes.

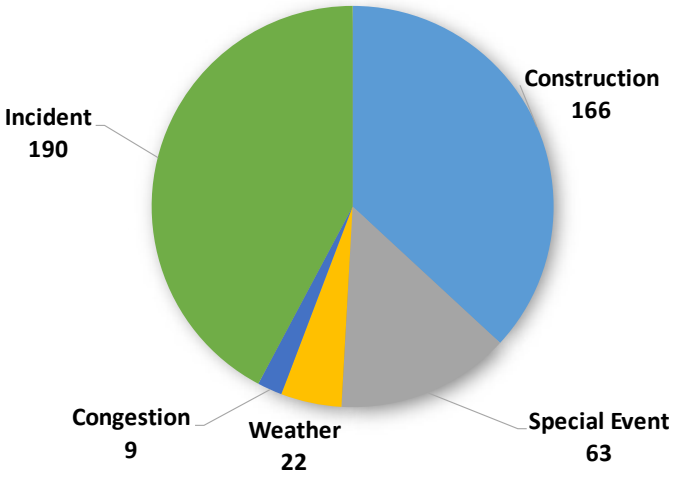


Figure 4

Field Device Availability

The WMTOC tracks the availability of all system devices so that timely maintenance can occur. The reliability of the devices, in turn, ensures that the WMTOC has tools available to accurately provide traffic conditions to the motoring public. **Table 1** shows field device availability for this month.

Device Type	Number of Devices	Percent of Time Available
Camera	68	83%
DMS	33	92%
Microwave vehicle detection system	132	61%

Table 1

Work Zone Activities

The WMTOC provides support for the transportation service centers (TSC) in the Grand Region during the construction season. We perform quality assurance/quality control on events entered into Mi Drive, post events in Mi Drive, monitor active work zones with available tools and ITS devices, and provide a weekly construction report of upcoming projects. **Figure 5** shows the total number of events entered for each TSC and the number of events for which the WMTOC provided direct support.

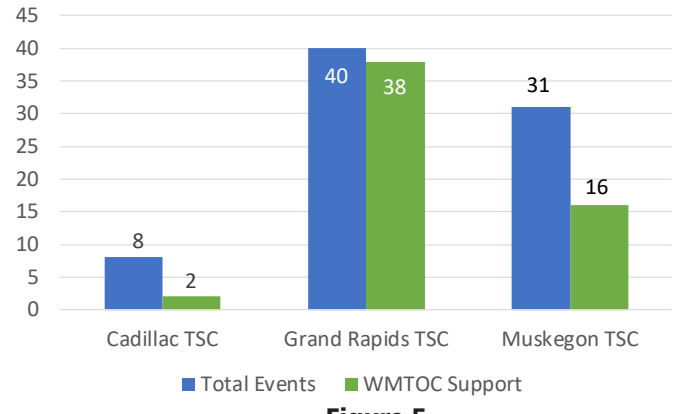


Figure 5

Incidents on Key Routes

US-131 experienced the most total **Incidents** this month, and had the greatest incident-per-mile rate for the month. The longest average incident duration during the current month occurred along **M-37/M-44**. See **Table 2**, which includes the numbers of incidents handled by the WMTOC on each route.

		August 2018			August 2017			Previous 12-month Avg.		
Route	Miles	Total Incidents	Incidents Per Mile	Average Duration	Total Incidents	Incidents Per Mile	Average Duration	Total Incidents	Incidents Per Mile	Average Duration
I-96, US-31 to M-50	52	19	0.6	53	12	0.3	42.92	18.42	0.5	56.13
I-196, Blue Star Hwy to I-96	40	31	1.2	60	29	1.1	47.03	30.58	1.2	44.51
US-131, 84th St to Rockford Rest Area	24.5	45	1.8	49	50	2	43.44	60.00	2.4	40.59
US-31, I-96 to M-120	8	2	0	78	1	0	70.00	2.58	0.1	49.35
M-6, I-196 to I-96	19	2	0.1	40	0	0	0	2.58	0.1	59.29
M-11, I-196 to I-96	11.5	3	0.3	25	0	0	0	1.08	0.1	92.23
M-37/M-44, M-6 to West River Dr	15.5	10	1.3	117	3	0.4	70.50	4.25	0.5	91.43

Table 2

Table Key Increase | No Change | Decrease — Data is compared to the same month of the previous year.

Total Incidents

There were **131** total incidents this month, **62 percent** of which were high-impact incidents. A high-impact incident is one that results in a total freeway closure, a ramp closure, or a lane closure.

Incident information is shown in **Figure 6**.

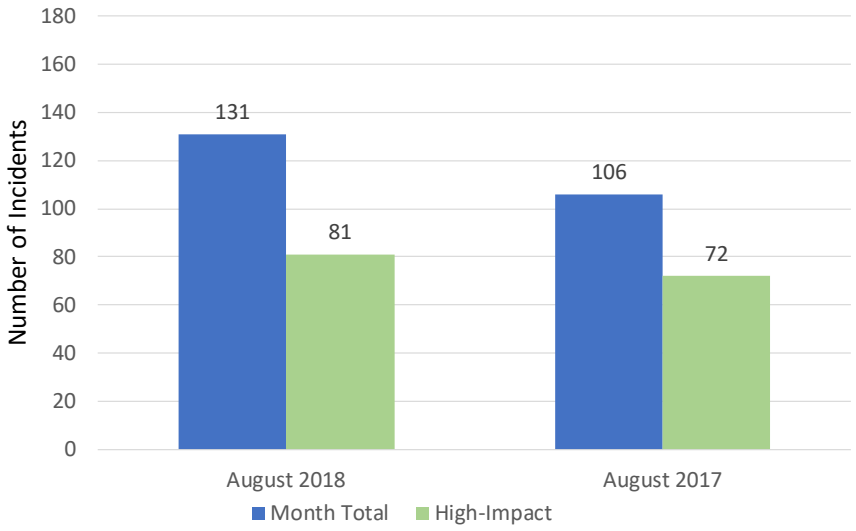


Figure 6

High-Impact Incidents

Forty percent of high-impact incidents this month occurred along **US-131**. For most high-impact incidents, CROs are required to provide e-mail notification to a pre-defined distribution list of individuals and organizations. The notification includes the location of the incident, the degree of closure, the reason for the closure, and any other pertinent information related to traffic operations. See **Table 3**.

Closure Type	August 2018	August 2017	Previous 12 - Month Avg
Freeway Closure	6	2	7.3
Lane Closure	70	62	74
Ramp Closure	5	8	5.8
Total	81	72	87.1

Table 3

Work Zone-Related Events

There were **0 incidents** identified by operators as being related to work zones during this month.

Top Duration Incidents

The longest-duration incident this month occurred on **northbound US-131 at I-96** and lasted **3 hours, 31 minutes**, compared to the average incident duration of **58 minutes** for August incidents. See **Table 4**.

Location	Date	Duration	Details
NB US-131 at I-96	Aug. 15	3 hr 31 min	Multi-Vehicle Crash
WB I-96 at Bristol Avenue	Aug. 10	3 hr 16 min	Tractor-Trailer Crash
NB US-131 at I-96	Aug. 28	2 hr 44 min	Multi-Vehicle Crash
WB I-96 after Morris Lake Road	Aug. 09	1 hr 47 min	Single-Vehicle Crash
SB US-131 at M-6	Aug. 21	1 hr 44 min	Debris in the Roadway

Table 4

Total of Unplanned Incidents per Weekday Hour

During the month of August, **6 a.m.** had the largest hourly number of incidents. Historically, **7 a.m.** has the largest hourly number of incidents in the Grand Region. **Figure 7** shows **Unplanned Incidents** for weekdays for this month.

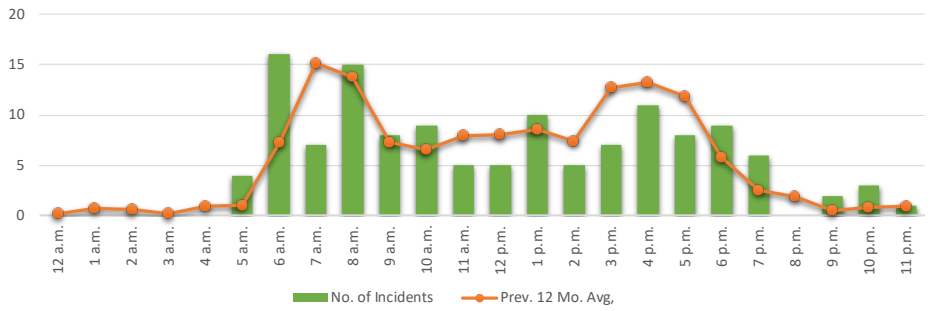


Figure 7

Incident and Roadway Clearance Times

First responders and MDOT share a goal of clearing incidents from the roadway and reducing incident clearance times to limit the risk to travelers and responders.

"Incident clearance time" is defined as the time between the awareness of an incident and the time when all vehicles are removed from the scene. **"Roadway clearance time"** is defined as the time between the awareness of an incident and confirmation that all lanes are open to traffic.

Effective response and clearance improves safety for motorists as well as first responders. MDOT's goal is to minimize delays caused by incidents as well as the occurrences of secondary incidents.

Figure 8 and **Figure 9** illustrate roadway clearance times and incident clearance times.

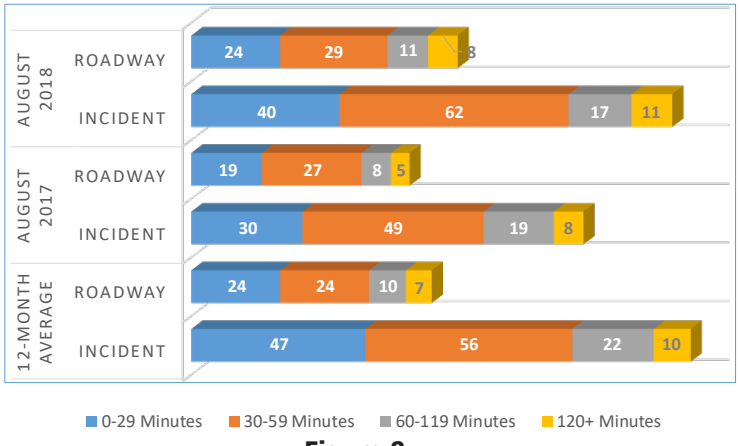


Figure 8

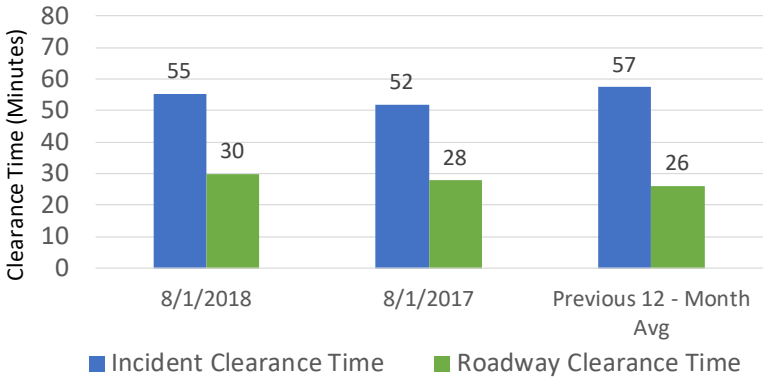


Figure 9

Secondary Crashes

Out of the **114** total crashes this month, **2 percent** were **Secondary Crashes** as observed by WMTOC CROs.

Crash Hot Spot Activity

The hot spots depicted on the map below are described in **Table 5**. The minimum threshold used for categorizing a location as a "top" hot spot is **four crashes**. This threshold is set based on historical data for the WMTOC coverage area.

The top **Crash** locations for the month are identified on the map below. Each month the locations may change.

Hot Spot	Freeway and Cross Street	Count	% of Total Crashes	Appearance in Previous 12 Months
A	US-131 at I-196	10	9%	10
B	US-131 at Leonard Street	6	5%	5
C	I-96 at M-37/M-44 (East Beltline Avenue)	5	4%	2
D	US-131 at I-196 BS (Franklin Street)	5	4%	4
E	US-131 at M-11 (28th Street)	5	4%	1

Table 5